

5 providing a telephone interface with an indication denoting the unavailability of a  
6 communication channel if it is determined that the communication station does not have a  
7 communication channel available; and  
8 enabling receipt of one or more digits of a telephone number from the telephone interface  
9 even if no communication channels are available and comparing each of the received digits, as  
10 received, against corresponding digits of one or more emergency codes to determine whether a  
11 priority channel request is required to facilitate an emergency telephone call, and disabling the  
12 receipt of further digits if it is determined that a received digit is not associated with an  
13 emergency code.

1 36. Please cancel without prejudice.

C1 1 <sup>2</sup>~~37~~. (Twice Amended) A method according to claim <sup>1</sup>~~35~~, further comprising,  
2 issuing the priority channel request to the servicing communication station if the result of  
3 the comparison reveals that the received digits correspond to an emergency code and no other  
4 communication channels are otherwise available.

1 38. A method according to claim 37, wherein the priority channel request denotes a priority  
2 class of service that is greater than that of non-emergency telephone calls, such that the servicing  
3 communication station reallocates communication channel parameters to facilitate the priority  
4 channel request.

1 39. (Amended) A method according to claim 38, wherein reallocation of communication  
2 channel parameters include one or more of tearing down a lower priority communication channel  
3 to facilitate the priority channel request, reallocation of bandwidth of one or more  
4 communication channels to provide bandwidth to the priority channel request, modifying a  
5 spatial division multiple access (SDMA) reuse pattern to provide bandwidth for the priority  
6 channel request, and the like.

1 40. (Amended) A method according to claim 35, wherein determining whether a  
2 communication channel is available comprises:  
3 receiving an off-hook detection signal at the transceiver;  
4 issuing a channel request from the subscriber unit to the servicing communication station;  
5 and  
6 receiving a response at the subscriber unit from the communication station to the channel  
7 request denoting whether a communication channel is available.

1 41. A method according to claim 35, wherein the indication that all communication channels  
2 are currently unavailable includes one or more of a fast busy signal, a null signal (silence), a  
3 monotone signal, and/or any signal other than a dial tone.

1 42. A method according to claim 35, further comprising:  
2 issuing a priority channel request to the servicing communication station if the subscriber  
3 unit receives digits from the telephone interface denoting one or more emergency codes  
4 associated with one or more emergency services.

1 43. A method according to claim 42, further comprising:  
2 facilitating the emergency telephone call over a communication channel made available  
3 by the communication station through call completion.

1 44. A method according to claim 35, further comprising:  
2 converting dual-tone, multiple frequency (DTMF) tones received from the telephone  
3 interface representing the telephone number entered by the user to digital signal(s) for the  
4 transceiver.

1 45. A method according to claim 44, wherein said conversion is performed even if the  
2 subscriber unit receives an indication from the servicing communication station that all  
3 communication channels are currently unavailable.

1 46. A method according to claim 35, wherein the emergency codes are one or more of a  
2 telephone number, a speed-dial code and/or a shortened emergency services code.

1 47. An article of manufacture comprising a machine accessible storage medium to provide  
2 machine executable instructions which, when executed, cause a machine to implement a method  
3 according to claim 35.

1 48. (Amended) A wireless local loop subscriber unit comprising:  
2 a telephone interface, to enable a user to enter a telephone number to place a telephone  
3 call; and



4 a transceiver, coupled to the telephone interface, to accept entry of a telephone number  
5 entered by the user even after determining that no communication channels are currently  
6 available from a servicing communication station, to compare each digit of the telephone number  
7 as received against a corresponding digit of one or more emergency codes to determine whether  
8 to issue a priority channel request to the communication station for a communication channel if  
9 the telephone number received from the telephone interface corresponds to one or more  
10 emergency services, and to disable receipt of additional digits of a telephone number if it is  
11 determined that a received digit is not associated with an emergency code.

1 49. A wireless local loop subscriber unit according to claim 48, further comprising:  
2 an off-hook signal generator, responsive to the telephone interface, to generate an off-  
3 hook signal to prompt the transceiver to request a communication channel from the  
4 communication station when the user lifts a handset of the telephone interface to place a call.

1 50. A wireless local loop subscriber unit according to claim 49, wherein the transceiver  
2 responds to the off-hook signal by requesting a communication channel and providing the  
3 telephone interface with an indication denoting whether a communication channel is available  
4 from the communication station.

1 51. A wireless local loop subscriber unit according to claim 50, wherein the transceiver  
2 provides one or more of a fast busy signal, a constant monotone signal, and/or any tone other  
3 than a dial tone as an indication to the user via the telephone interface that no communication  
4 channels are currently available to facilitate a telephone call.



1 52. A wireless local loop subscriber unit according to claim 48, further comprising:  
2 a dual-tone, multiple frequency (DTMF) converter to convert DTMF signals generated by  
3 the telephone interface representing the telephone number entered by the user in to digital signals  
4 appropriate for input to the transceiver.

1 53. (Amended) A wireless local loop subscriber unit according to claim 52, wherein the  
2 DTMF converter remains enabled to receive and convert DTMF signals for the transceiver even  
3 if the transceiver determines that no communication channels are currently available until it is  
4 determined that a received digit does not correspond to an emergency services code.

1 54. A wireless local loop subscriber unit according to claim 53, wherein the transceiver  
2 receives and decodes the digital signals to determine whether the user is dialing an emergency  
3 number, even if there are no communication channels available to support the call.

1 55. A wireless local loop subscriber unit according to claim 54, further comprising:  
2 a memory device, to store one or more codes associated with an associated one or more  
3 emergency services, wherein the transceiver compares received digital signals associated with a  
4 user-entered telephone number against the stored one or more codes to determine whether the  
5 user is telephone number is associated with the one or more emergency services.

1 56. (Amended) A wireless local loop subscriber unit according to claim 55, wherein the  
2 transceiver compares the digital signals associated with the user-entered telephone number on a  
3 digit-by-digit basis concurrently with receipt of the digits against corresponding digits of the one

4 or more stored emergency codes, and disables receipt of further digits if the comparison reveals  
5 that a received digit does not conform to a corresponding digit of an emergency code(s).

1 57. (Amended) A wireless local loop subscriber unit according to claim 48, the transceiver  
2 comprising:

3 a memory, to receive and retain one or more codes associated with one or more  
4 emergency services; and

5 a processor, coupled to the memory, to receive digital signals representative of the dialed  
6 telephone number and compare the received signals to the one or more codes stored in memory  
7 to detect telephone calls to the one or more emergency services.

1 58. A wireless local loop subscriber unit according to claim 48, further comprising:

2 an on-/off-hook detector, coupled between the telephone device and the transceiver, to  
3 provide an off-hook indication to the transceiver when the user lifts a handset of the telephone  
4 interface.

1 59. (Amended) A wireless communication system comprising:

2 a communication station, to communicatively couple one or more wireless local loop  
3 subscriber unit(s) to a wireline telephony network; and

4 a wireless subscriber unit, communicatively coupled to the communication station, to  
5 accept entry of a telephone number by a user via a telephone interface even after determining  
6 that no communication channels are currently available between the subscriber unit and the  
7 communication station as long as entered digits conform to corresponding digits of one or more

8 emergency code(s) associated with one or more emergency services, and to issue a priority  
9 channel request for a communication channel if no communication channels are otherwise  
10 available to service a telephone call to an emergency service.

1 60. (Amended) A wireless system according to claim 59, the wireless subscriber unit  
2 comprising:  
3 a transceiver, coupled to the telephone interface, to accept the telephone number entered  
4 by the user even after determining that no communication channels are currently available, and  
5 to issue a priority channel request for a communication channel if the telephone number entered  
6 corresponds to one or more stored emergency codes associated with a commensurate one or  
7 more emergency services.

1 61. (Amended) A wireless system according to claim 60, wherein the transceiver issues  
2 one or more priority channel request(s) to the communication station to obtain a communication  
3 channel if no communication channels are otherwise available upon detecting entry by the user  
4 of a code associated with an emergency service.

1 62. (Amended) A wireless system according to claim 60, wherein the stored codes include  
2 one or more of a standard telephone number associated with a single emergency service, a speed  
3 dial code, and/or a shortened telephone number to an agency serving multiple emergency  
4 services.

1 63. (Amended) A wireless system according to claim 62, the subscriber unit further  
2 comprising:  
3 a memory device, coupled to the transceiver, to receive and retain one or more  
4 emergency codes.

1 64. (Amended) A wireless system according to claim 59, the communication station  
2 comprising:  
3 a transceiver, to receive priority channel requests from one or more subscriber units and  
4 modify one or more communication channel parameters to accommodate a priority channel  
5 request when no communication channels are otherwise available.

1 65. (Amended) A wireless system according to claim 64, wherein the modification of one  
2 or more communication channel parameters includes one or more of tearing down an existing  
3 call to free the communication channel to accommodate the priority channel request, lowering  
4 bandwidth associated with one or more communication channels to free bandwidth for an  
5 additional communication channel to accommodate the priority channel request, and/or  
6 modifying one or more spatial division, multiple access (SDMA) reuse parameters to obtain a  
7 communication channel to accommodate the priority channel request.

1 66. (Amended) An article of manufacture comprising:  
2 a machine accessible medium to provide instructions which, when executed by a wireless  
3 local loop subscriber unit, cause the subscriber unit to determine whether a communication  
4 channel is available at a servicing communication station to accommodate a telephone call upon



5 detecting an off-hook signal from a telephone interface, provide the telephone interface with an  
6 indication denoting the unavailability of a communication channel if it is determined that the  
7 communication station does not have a communication channel available, to enable receipt of  
8 one or more digits of a telephone number from the telephone interface even if no communication  
9 channels are available to compare each of digit of the telephone number, as received, against  
10 corresponding digit(s) of one or more emergency codes associated with one or more emergency  
11 telephone numbers and determine whether a priority channel request is required to facilitate an  
12 emergency telephone call.

1 67. (Amended) An article of manufacture according to claim 66, further comprising  
2 instructions which, when executed, cause a wireless local loop subscriber unit to compare each  
3 digit of the received telephone number, as received, against one or more emergency codes  
4 maintained in the subscriber unit to determine whether the received digits correspond to one or  
5 more emergency services associated with the one or more emergency codes.

1 68. An article of manufacture according to claim 66, further comprising instructions which,  
2 when executed, cause the wireless local loop subscriber unit to issue a priority channel request  
3 upon detecting entry of an emergency code even if no communication channels are currently  
4 available.

1 69. An article of manufacture according to claim 68, wherein the priority channel request  
2 denotes a priority class of service that is greater than that of non-emergency telephone calls, such

3 that the servicing communication station reallocates communication channel parameters to  
4 facilitate the priority channel request.

1 70. An article of manufacture according to claim 66, further comprising instructions which,  
2 when executed, cause a wireless local loop subscriber unit to facilitate an emergency telephone  
3 call through completion via a communication channel made available by the communication  
4 station in response to the subscriber units priority channel request.

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1 71. (Amended) An article of manufacture according to claim 66, further comprising  
2 instructions which, when executed, cause a wireless local loop subscriber unit to convert dual-  
3 tone, multiple frequency (DTMF) tones received from the telephone interface representing the  
4 telephone number entered by the user to digital signal(s), wherein said conversion is performed  
5 even if the subscriber unit receives an indication from the servicing communication station that  
6 all communication channels are currently unavailable until a digit is received that does not  
7 correspond to one or more emergency service code(s).

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1 72. A wireless communication system according to claim 59, wherein the wireless  
2 communication system is a wireless local loop (WLL) communication system, and the subscriber  
3 unit is a WLL subscriber unit.

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1 73. A method according to claim 35, wherein the priority channel is a reduced rate  
2 communication channel reserved to facilitate emergency telephone calls.

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1 74. A method according to claim 35, wherein the priority channel is dynamically created by a  
2 communication station by invoking spatial division multiple access (SDMA) processing to  
3 effectively parse multiple communication channels including the priority channel from a single  
4 physical channel to facilitate the emergency telephone call.

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1 75. A subscriber unit according to claim 48, wherein the priority channel is a reduced rate  
2 communication channel reserved for emergency telephone call, and wherein the transceiver  
3 includes reduced rate communication facilities.

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1 76. A subscriber unit according to claim 48, wherein the priority channel is a spatial division  
2 multiple access (SDMA) enabled channel to facilitate an emergency telephone call.

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1 77. A wireless communication system according to claim 59, wherein the communication  
2 station further comprises:  
3 spatial division multiple access (SDMA) processing facilities, responsive to the  
4 transceiver, to dynamically select a traditional communication channel and parse it into multiple  
5 SDMA channels employing adaptive antenna technology, wherein the transceiver places the  
6 emergency call on one or more of the SDMA channels to facilitate the emergency telephone call.

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1 78. A wireless communication system according to claim 59, the communication station  
2 further comprising:  
3 reduced rate communication channels, reserved and dynamically assigned by the  
4 transceiver to facilitate emergency telephone calls.

1 79. A wireless subscriber unit comprising:  
2 a telephone interface, to enable a user to enter a telephone number to place a telephone  
3 call; and  
4 a transceiver, coupled to the telephone interface, to accept entry of a telephone number  
5 entered by the user even after determining that no communication channels are currently  
6 available from a servicing communication station, to compare each digit of the telephone number  
7 as received against a corresponding digit of one or more emergency codes to determine whether  
8 to issue a priority channel request to the communication station for a communication channel if  
9 the telephone number received from the telephone interface corresponds to one or more  
10 emergency services, and to disable receipt of additional digits of a telephone number if it is  
11 determined that a received digit is not associated with an emergency code.

1 80. A subscriber unit according to claim 79, further comprising:  
2 an off-hook signal generator, responsive to the telephone interface, to generate an off-  
3 hook signal to prompt the transceiver to request a communication channel from the  
4 communication station when the user lifts a handset of the telephone interface to place a call.

1 81. A subscriber unit according to claim 80, wherein the transceiver responds to the off-hook  
2 signal by requesting a communication channel and providing the telephone interface with an  
3 indication denoting whether a communication channel is available from the communication  
4 station.



1 82. A subscriber unit according to claim 81, wherein the transceiver provides one or more of  
2 a fast busy signal, a constant monotone signal, and/or any tone other than a dial tone as an  
3 indication to the user via the telephone interface that no communication channels are currently  
4 available to facilitate a telephone call.

1 83. A subscriber unit according to claim 79, further comprising:  
2 a dual-tone, multiple frequency (DTMF) converter to convert DTMF signals generated by  
3 the telephone interface representing the telephone number entered by the user in to digital signals  
4 appropriate for input to the transceiver.

1 84. A subscriber unit according to claim 83, wherein the DTMF converter remains enabled to  
2 receive and convert DTMF signals for the transceiver even if the transceiver determines that no  
3 communication channels are currently available until it is determined that a received digit does  
4 not correspond to an emergency services code.

1 85. A subscriber unit according to claim 84, wherein the transceiver receives and decodes the  
2 digital signals to determine whether the user is dialing an emergency number, even if there are  
3 no communication channels available to support the call.

1 86. A subscriber unit according to claim 85, further comprising:  
2 a memory device, to store one or more codes associated with an associated one or more  
3 emergency services, wherein the transceiver compares received digital signals associated with a

4 user-entered telephone number against the stored one or more codes to determine whether the  
5 user is telephone number is associated with the one or more emergency services.

1 87. A subscriber unit according to claim 86, wherein the transceiver compares the digital  
2 signals associated with the user-entered telephone number on a digit-by-digit basis concurrently  
3 with receipt of the digits against corresponding digits of the one or more stored emergency  
4 codes, and disables receipt of further digits if the comparison reveals that a received digit does  
5 not conform to a corresponding digit of an emergency code(s).

1 88. A subscriber unit according to claim 79, the transceiver comprising:  
2 a memory, to receive and retain one or more codes associated with one or more  
3 emergency services; and  
4 a processor, coupled to the memory, to receive digital signals representative of the dialed  
5 telephone number and compare the received signals to the one or more codes stored in memory  
6 to detect telephone calls to the one or more emergency services.

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1 89. A subscriber unit according to claim 79, wherein the priority channel is a reduced rate  
2 communication channel reserved for emergency telephone call, and wherein the transceiver  
3 includes reduced rate communication facilities.

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1 90. A subscriber unit according to claim 79, wherein the priority channel is a spatial division  
2 multiple access (SDMA) enabled channel to facilitate an emergency telephone call.

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1 91. A method comprising:  
2 receiving a priority channel request at a communication station from a wireless subscriber  
3 unit, the priority channel request denoting an emergency telephone call; and  
4 establishing the emergency telephone call using a reduced rate communication channel  
5 reserved for emergency telephone calls when traditional communication channels are otherwise  
6 unavailable.

1 92. A method according to claim 91, the method further comprising:  
2 receiving a request for a communication channel from a wireless subscriber unit;  
3 providing the subscriber unit with an indication that no communication channels are  
4 available; and  
5 enabling receipt of a priority channel request if one or more reduced rate, reserve  
6 channels are available to facilitate an emergency telephone call from the subscriber unit.

1 93. A method according to claim 91, the method further comprising:  
2 determining whether a reserved, reduced rate communication channel is available to  
3 facilitate the emergency telephone call upon receipt of a priority channel request; and  
4 establishing the emergency telephone call on the reserved, reduce rate communication  
5 channel to facilitate communication services through call completion if the reserved, reduce rate  
6 communication channel is available.

1 94. A method according to claim 93, the method further comprising:

invoking spatial division multiple access (SDMA) processing to free communication channel resources to handle the emergency telephone call if a reserved, reduced rate communication channel is not available.

95. A method according to claim 93, wherein the priority channel request denotes a priority class of service that is greater than that of non-emergency telephone calls, such that the servicing communication station reallocates communication channel parameters to facilitate the priority channel request in the absence of available communication channels or reserved, reduced rate communication channels.

96. A method according to claim 95, the method further comprising:  
identifying an established communication session with a lower priority than the priority channel request; and  
tearing down the established communication session to free a communication channel to facilitate the priority channel request if a reserved, reduced rate communication channel is not available.

97. A communication station comprising:  
a plurality of wireless communication channels including full-rate communication channels and reserved, reduced-rate communication channels; and  
control logic, responsive to call requests received from subscriber units in a coverage area of the communication station, to select either a wireless communication channel or a reserved, reduced rate communication channel to facilitate a communication session, wherein the control



7 logic selectively employs a reserved, reduced rate communication channel to facilitate a  
8 telephone call associated with a priority channel request when no other communication channels  
9 are available.

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1 98. A communication station according to claim 97, wherein the priority channel request  
2 denotes an emergency telephone call.

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1 99. A communication station according to claim 97, wherein the communication channels are  
2 established between the communication station and the subscriber unit(s) using transceiver(s),  
3 wherein at least subset of the transceivers include processing features to facilitate the reserved,  
4 reduced rate communication channel(s).

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1 100. A communication station according to claim 97, wherein the control logic employs  
2 spatial division multiple access (SDMA) processing techniques to free communication channel  
3 resources when neither a communication channel nor a reserved, reduced rate communication  
4 channel are otherwise available.

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1 101. A method comprising:  
2 receiving a priority channel request from a wireless subscriber unit; and  
3 adjusting a spatial division multiple access (SDMA) channel reuse pattern of a wireless  
4 communication station to free communication resources to facilitate a telephone call associated  
5 with the priority channel request when other communication channels are not available.

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1 102. A method according to claim 101, wherein the priority channel request denotes an  
2 emergency telephone call.

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1 103. A method according to claim 101, wherein the SDMA processing features utilize  
2 adaptive antenna technology to improve channel reuse capability to facilitate multiple  
3 communication sessions using a single physical communication channel.

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1 104. A method according to claim 103, wherein SDMA processing features facilitate two (2)  
2 disparate communication sessions over a single communication channel.

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1 105. A method according to claim 103, wherein one of the multiple communication sessions  
2 established on the SDMA channel is an emergency telephone call associated with the received  
3 priority channel request.

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1 106. A communication station comprising:  
2 two or more antennae to support wireless communication channels dynamically  
3 established between the communication station and one or more subscriber unit(s) in a coverage  
4 area supported by the communication station; and  
5 control logic, coupled to the antennae, to control one or more aspects of wireless  
6 communication with the subscriber unit(s) including a spatial division multiple access (SDMA)  
7 reuse pattern employed by the communication station, wherein the control logic adjusts the  
8 SDMA reuse pattern to free a communication channel when a communication channel is  
9 otherwise unavailable in response to a priority channel request from a subscriber unit.

1 107. A communication station according to claim 106, wherein the priority channel request  
2 denotes a request for an emergency telephone call.

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1 108. A communication station according to claim 107, wherein the control logic facilitates the  
2 emergency telephone call associated with the priority channel request using newly created  
3 communication resources associated with the new SDMA reuse pattern.

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1 109. A communication station according to claim 107, wherein the control logic adjusting the  
2 SDMA reuse pattern facilitates two communication sessions using a single wireless  
3 communication channel, wherein one of the communication sessions is the emergency telephone  
4 call associated with the priority channel request.

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### **REMARKS**

This Amendment is submitted in response to the Office Action mailed October 16, 2001, wherein claims 35 and 37-109 were rejected. With this response, claim 37 has been amended to remove a basis for objection. It should be noted that the amendment merely removed a lingering informality, and was not made to further distinguish the claimed invention from that of the cited references. In response to the substantive rejection of the remaining claims, Applicant traverses the rejection, as presented in detail below. Thus, in light of the foregoing amendment and the following remarks, reconsideration of the above-referenced application is respectfully requested.

